

ABSTRACT

A system for dissipating heat in an electronic power module is provided. The system includes a semiconductor die, a substrate, and a heat sink in which is contained a first fluid, and a conduit through which a second fluid is permitted to flow. The substrate is attached on one surface to the die and configured to conduct heat from the die. The heat sink is attached to another surface of the substrate and transfers heat from the die to the first fluid contained therein, which evaporates due to the heat provided by the substrate. The fluid is condensed on a condensing wall cooled by the second fluid, which flows across the outer surface of the condensing wall, to transport heat away from the heat sink.